Remarks

Claim 20 is here amended. Support for amendment to claim 20 is found in this claim as originally filed and in ¶¶ [0018] and [0019] of the specification as filed.

No new matter has been added, and no new material presented that would necessitate an additional search on the part of the Examiner. Applicant reserves the right to prosecute claims having the scope of claims as originally filed in this application, or in another application having the same priority and/or filing dates.

Upon entry of this Amendment and Response, claims 17-33 remain pending.

Prior to addressing issues in the Office action, Applicant believes that a brief description of independent claims 17 and 28 would be helpful to the reader.

Claim 17 is directed to a method for selecting optimized transmission path in a <u>television distribution network</u>, the method including the steps of: receiving information relating to data to be transmitted to at least one <u>set-top box</u>, the information including metadata related to the data to be transmitted and an identification of the at least one set-top box; <u>building a list of available transmission paths</u> for the set-top box; and selecting an optimal transmission path based on the list and the metadata; and transmitting the data to the set-top box using the selected transmission path.

Claim 28 is directed to an apparatus for selecting optimized transmission in a <u>television distribution network</u> having a headend and a plurality of set-top boxes, the apparatus includes: a list creator, adapted to <u>create a list of available transmission paths</u> from the headend to a specified set-top box, or a group of specified set-top boxes; and, a data route selector, adapted to automatically select the best applicable transmission path from the list for transmitting based on a policy applied to the combination of at least a data type to be transmitted and the list.

Claims are novel

The Office action rejects claims 17-33 under 35 U.S.C. §102(e) in view of Bornstein et al. (U.S. patent application number 2008/0008089, published January 10, 2008). Applicant respectfully traverses.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Manual of Patent*

Examining Procedure §2131 (M.P.E.P.), 8th ed., Rev. 6, September 2007, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987).

Thus, the standard for rejection under 35 U.S.C. § 102 is identity. Applicant shows below that the cited prior art is not the same as the claims of the present application.

Bornstein et al., U.S. patent application number 2008/0008089, published January 10, 2008

Bornstein shows a routing mechanism operating in a content delivery network (CDN; Bornstein et al., Abstract). In a CDN, edge servers are organized into regions, with each region including a set of content servers that operate to share data across a common backbone such as a local area network (Ibid., Abstract). Delivery of content in a CDN is initiated by a request to an edge server from an end-user (Ibid., ¶'s [0006], [0007], [0030], and FIG. 1).

Bornstein shows a routing technique that allows an edge server operating within a given CDN region to retrieve content from an origin server by selectively routing through the CDN's own nodes in order to avoid network congestion and hot spots (Ibid., Abstract). Bornstein's routing service predicts a best path for a data transfer between a source location (e.g., a content provider origin server) and a target location (e.g., a CDN edge server) by analyzing some performance metric common to a set of possible routes (Ibid., ¶ [0016]).

The performance metric is evaluated by having the edge server initiate a file download "race" in response to receiving a request for given content, i.e., a number of simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period (Ibid., ¶ [0016]).

The identification of the intermediate nodes, i.e., alternative routes, to use for the race is determined in an off-line mapping process by performing given network traffic tests (Ibid., ¶ [0017]). Bornstein's mapping process is performed by a separate computer program running elsewhere in the network (Ibid., ¶ [0033]).

Bornstein's map making process performs network tests and uses the results of those tests to generate a map including a plurality of routes: the best route to the customer site, the best intermediate or "middle" region for tunneling, and the next best middle region (Ibid., ¶ [0018]).

Factual analysis demonstrates that Bornstein's mapping process generates only three routes for data to travel through, a best route and two alternative intermediate routes.

Nowhere does Bornstein show a method or apparatus for selecting optimized transmission path in a television distribution network, to which claims 17 and 28 are respectively directed. In contrast to claims 17 and 28, Bornstein shows a routing mechanism operating in a CDN, in which delivery of content is initiated by a request from an end-user to an edge server (Bornstein et al., ¶¶ [0006], [0007], [0030], and FIG. 1). The phrase "television distribution network" is not even mentioned in Bornstein. For at least this reason, Bornstein's routing mechanism is not the same as the method and apparatus that are the subject matter of claims 17 and 28 respectively.

Further, Bornstein fails to show receiving information relating to data to be transmitted to at least one set-top box. The information that Bornstein fails to show includes metadata related to the data to be transmitted and an identification of the at least one set-top box. In contrast, Bornstein shows transmitting data to a computer (Ibid., FIG. 1). Further, as the term "set-top box" is not even mentioned in Bornstein, Bornstein necessarily fails to show identification of the at least one set-top box. Even further, as Bornstein's routing mechanism is unrelated to a television distribution network and set-top boxes, Bornstein fails to show receiving information relating to data to be transmitted to at least one set-top box, to which claim 17 is directed.

Nowhere does Bornstein show a method or an apparatus that includes building or creating a list of available transmission paths for the set-top box, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows an off-line mapping process running elsewhere in the network from Bornstein's routing mechanism, in which the map-making program generates a map including only three routes for data to travel through, a best route and two alternative intermediate routes (Ibid., ¶¶ [0017], [0018], [0033], and FIG. 2). Using an off-line mapping process running elsewhere in the network to generate a map that includes only three routes is not the same as building or creating a list of available transmission paths for the set-top box, to which claims 17 and 28 are respectively directed.

Bornstein fails to show selecting an optimal transmission path based on the list and the metadata, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows selecting an optimal route based on "races", i.e., an actual test in which a number of

simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period (Ibid., ¶¶ [0016] and [0033]).

Nowhere does Bornstein show transmitting the data to the set-top box using the selected transmission path, to which claims 17 and 28 are respectively directed. In contrast, Bornstein shows transmitting data from an origin server to an edge server and ultimately to a computer (Ibid., FIG. 1).

Bornstein fails to show an apparatus that includes a list creator and a data route selector, to which claim 28 is directed. In contrast, Bornstein shows an off-line mapping process running elsewhere in the network from Bornstein's routing mechanism, in which the map-making program generates a map including only three routes for data to travel through, a best route and two alternative intermediate routes (Ibid., ¶¶ [0017], [0018], [0033], and FIG. 2). In fact, Bornstein states that his routing mechanism obtains the route map from a separate map maker program, operating elsewhere in the network (Ibid., ¶ [0033]).

The Office action on p. 2 ¶3 alleges that Bornstein ¶ [0032] shows receiving information relating to data to be transmitted to at least one set-top box, the information including metadata related to the data to be transmitted and an identification of the at least one set-top box. Applicant respectfully traverses.

For convenience of the reader, the section of Bornstein ¶ [0032] cited in the Office action is reproduced below:

> Instead of using content provider-side migration (e.g., using the tool **106**), a participating content provider may simply direct the CDNSP to serve an entire domain (or subdomain) by a DNS directive (e.g., a CNAME). In such case, the CDNSP may provide object-specific metadata to the CDN content servers to determine how the CDN content servers will handle a request for an object being served by the CDN. Metadata, as used herein, thus refers to the set of all control options and parameters for the object (e.g., coherence information, origin server identity information, load balancing information, customer code, other control codes, etc.), and such information may be provided to the CDN content servers via a configuration file, in HTTP headers, or in other ways. A configuration file is advantageous as it enables a change in the metadata to apply to an entire domain, to any set of directories, or to any set of file extensions. In one approach, the CDNSP operates a metadata transmission system **116** comprising a set of one or

> more servers to enable metadata to be provided to the CDNSP content servers. The system **116** may comprise at least one control server **118**, and one or more staging servers **120*a-n***, each of which is typically an HTTP server (e.g., Apache). Metadata is provided to the control server **118** by the CDNSP or the content provider (e.g., using a secure extranet application) and periodically delivered to the staging servers **120*a-n***. The staging servers deliver the metadata to the CDN content servers as necessary. (Ibid., ¶ [0032])

Factual analysis of this section of Bornstein demonstrates that the term "set-top box" does not even appear. Thus ¶ [0032] of Bornstein fails to show identification of the at least one set-top box. Even further, nowhere does this section of Bornstein show receiving information relating to data to be transmitted to at least one set-top box, to which claim 17 is directed.

The Office action on p. 2 ¶3 alleges that Bornstein ¶ [0033] shows building a list of available transmission paths for the set-top box and selecting an optimal transmission path based on the list and the metadata. Applicant respectfully traverses.

For convenience of the reader, the section of Bornstein ¶ [0033] cited in the Office action is reproduced below:

> FIG. 2 illustrates a typical machine configuration for a CDN content edge server. Typically, the content server **200** is a caching appliance running an operating system kernel **202**, a file system cache **204**, CDN software **206**, TCP connection manager **208**, and disk storage **210**. CDN software **206**, among other things, is used to create and manage a "hot" object cache **212** for popular objects being served by the CDN. For HTTP content, the content server **200** receives end user requests for content, determines whether the requested object is present in the hot object cache or the disk storage, serves the requested object via HTTP (if it is present), or establishes a connection to another content server or an origin server to attempt to retrieve the requested object upon a cache miss. Generalizing, a cache miss can occur when the requested object is not in cache, when the requested object is in cache but is stale, when the requested object is non-cacheable, or the like. In all such cases, it may be necessary for the edge server to contact a content provider origin server to fetch the requested object. The present invention provides a technique for enabling the edge server to use an optimal path for that communication. To that end, CDN software **206** includes a guide process **215** that performs various functions to facilitate the optimized routing technique of the present invention. Generally, guide process **215** fetches a route map from a map maker process **220** (running elsewhere in the network), initiates performance metric tests (e.g., download races) on various routes identified in the map, collects and analyzes the results of those tests, and orders the routes accordingly so that the edge server can communicate with a content provider origin server via an optimal route whenever necessary. As used herein, "optimal" is not necessarily

> the best possible route in any kind of absolute sense; rather, it is a best route found given whatever constraints are then imposed on the network, varous [sic] systems, connectivity constraints, and the like. The guide process is a computer program code, i.e., a series of program instructions, executable by a processor. (Ibid., ¶ [0032]; emphasis added)

This section of Bornstein shows that his routing mechanism retrieves an already prepared map, generated by a separate map maker process running elsewhere in the network, i.e., a separate and distinct computer program. Thus ¶ [0033] of Bornstein does not show building a list of available transmission paths for the set-top box, to which claim 17 is directed. Rather, this section of Bornstein shows retrieving an already prepared route map made by a separate computer program operating elsewhere in the network.

Further, this section of Bornstein necessarily fails to show selecting an optimal transmission path based on the list and the metadata, to which claim 17 is directed. Rather, this section of Bornstein states that download races determine an optimal path for data to be transmitted, i.e., an actual test in which a number of simultaneous downloads of the given content are initiated from the source location over a plurality of routes, some of which may include intermediate nodes, and the winning path is then used for transfers between the source and the target locations for a given time period.

The standard for anticipation is identity. Factual analysis above demonstrates that Bornstein is not the same as the subject matter of claims 17 and 28. Therefore claims 17 and 28 are novel in view of Bornstein.

Claims 18-27 and 29-33 depend directly or indirectly from claims 17 or 28 and incorporate all of the subject matter of these claims and include additional subject matter. Therefore claims 18-27 and 29-33 also are novel in view of Bornstein.

Applicant respectfully requests withdrawal of rejection of claims 17-33 under 35 U.S.C. §102(e) in view of Bornstein.

Claims as here amended comply with 35 U.S.C. §112 ¶2

The Office action on p. 6 ¶18 rejects claims 20 under 35 U.S.C. §112 ¶2 stating that this claim depends from a canceled claim. Claim 20 is accordingly here amended to depend from claim 19.

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Applicant respectfully requests withdrawal of rejection of claim 20 as here amended under 35 U.S.C. §112 ¶2.

Summary

On the basis of the foregoing amendments and reasons, Applicant respectfully submits that the pending claims are in condition for allowance, which is respectfully requested.

If there are any questions regarding these remarks, the Examiner is invited and encouraged to contact Applicant's representative at the telephone number provided.

Respectfully submitted,

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